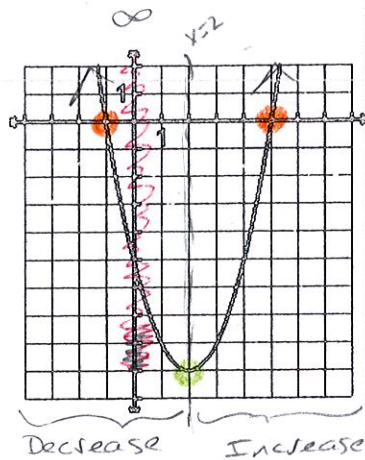


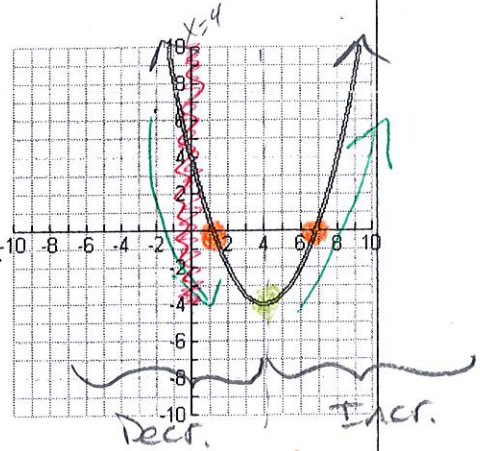
Part I: Characteristics of Functions

1. Domain:  $\mathbb{R}$   
 Range:  $[-9, \infty)$   
 Zeros:  $(-1, 0)$   $(5, 0)$   
 Vertex:  $(2, -9)$   
 Axis of Symmetry:  $x=2$   
 Int of Inc:  $(-\infty, 2)$   
 Int of Dec:  $(2, \infty)$   
 Min:  $y=-9$   $(2, -9)$   
 Max: None  
 Avg. Rate of change  $0 \leq x \leq 3$



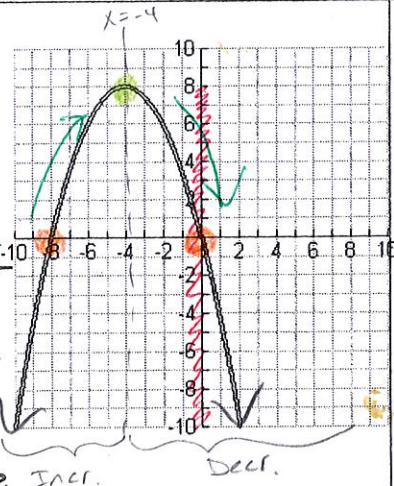
Write the equation of the graph:

2. Domain:  $\mathbb{R}$   
 Range:  $[-4, \infty)$   
 Zeros:  $(1, 0)$   $(7, 0)$   
 Vertex:  $(4, -4)$   
 Axis of Symmetry:  $x=4$   
 Int of Inc:  $(4, \infty)$   
 Int of Dec:  $(-\infty, 4)$   
 Min:  $y=-4$   $(4, -4)$   
 Max: None  
 Avg. Rate of change  $0 \leq x \leq 6$



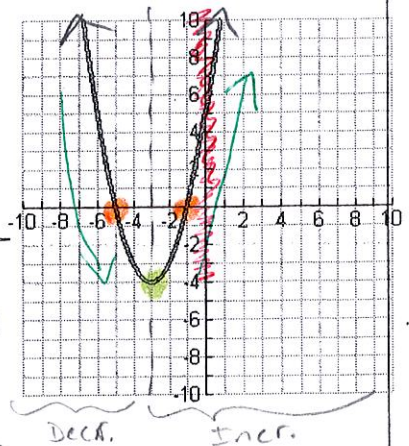
Write the equation of the graph:

3. Domain:  $\mathbb{R}$   
 Range:  $(-\infty, 8]$   
 Zeros:  $(-8, 0)$   $(0, 0)$   
 Vertex:  $(-4, 8)$   
 Axis of Symmetry:  $x=-4$   
 Int of Inc:  $(-\infty, -4)$   
 Int of Dec:  $(-4, \infty)$   
 Min: None  
 Max:  $y=8$   $(-4, 8)$   
 Avg. Rate of change  $-6 \leq x \leq 0$



Write the equation of the graph:

4. Domain:  $\mathbb{R}$   
 Range:  $[-4, \infty)$   
 Zeros:  $(-5, 0)$   $(-1, 0)$   
 Vertex:  $(-3, -4)$   
 Axis of Symmetry:  $x=-3$   
 Int of Inc:  $(-3, \infty)$   
 Int of Dec:  $(-\infty, -3)$   
 Min:  $y=-4$   $(-3, -4)$   
 Max: None  
 Avg. Rate of change  $-3 \leq x \leq 1$



Write the equation of the graph: